

New species of *Blattidae* in the collection of the
Deutsche Entomologische National-Museum. (Orthopt.)

By R. Shelford, M. A., F. L. S. (Oxford).

(Plate II.)

I am indebted to Mr. Sigm. Schenkling for the opportunity of examining a small collection of *Blattidae* in the Deutsche Entomologische National-Museum. The following species ¹⁾ appear to be undescribed previously.

Genus *Anaplecta* Burm.

Anaplecta conradti sp. n. (Plate II, fig. 1).

♂. Flavo-testaceous, disc of pronotum with two broad longitudinal castaneous vittae, lateral margins broadly hyaline. Tegmina with 10 costals, joined by transverse venulae, discoidal field with 2 longitudinal sectors, which on the right tegmen join distally. Wings infuscated, marginal field dilated, 7 costal veins, radial vein strongly flexuose, median vein slender, straight; medio-discal area twice as broad as medio-ulnar and crossed by one transverse nervule, 1st axillary vein tri-ramose; apical area parabolic, two-fifths of total wing-length, its base not obtusely angled, its apex not emarginate. Antepenultimate and penultimate abdominal tergites narrow and transverse, their posterior margins widely emarginate; supra-anal lamina trigonal, on each side an incrassated carina, these carinae converge posteriorly and define a depression at the bottom of which is situated the scent-gland opening, marked by two tufts of hair. Cerci long, testaceous.

Total length 6,5 mm; length of tegmina 5 mm.

1 ♂, Kamerun (Conradt).

The wing-venation in the African *Anaplectae* is very uniform and affords few characters for purposes of specific diagnosis; the above described species should be readily recognisable by its colouration and by the form of the secondary sexual apparatus of the male, a character which has hitherto not been shown to occur in any other species of the genus.

Genus *Ischnoptera* Burm.

Thanks to the kindness of Professor Dr. G. W. Müller of Greifswald I have been able to examine several of the types of

¹⁾ Except where otherwise stated the types are in the Deutsche Entomologische National-Museum.

the species described by Gerstaecker in 1883 from the Cameroons district (Mitt. Ver. Vorpomm. XIV) and I find that several of the species referred in that memoir to the genus *Phyllodromia*, belong really to the genus *Ischnoptera*; these are *cinnamomea*, *basalis*, *punctifrons*, *aegrotata* and *relicens*. The type of *amplicollis* cannot be found. *Phyllodromia pulchella* Gerst. should be referred to the genus *Theganopteryx* (sub. fam. *Ectobiinae*).

Ischnoptera basalis, Gerst. (Plate II, fig. 2).

Phyllodromia basalis Gerstaecker l. c. p. 63 (1883).

The male exhibits a most remarkable modification of secondary sexual characters, quite unparalleled amongst the other members of the genus or even sub-family. From beneath the posterior angle of the 6th abdominal tergite projects backwardly on either side a narrow lanceolate strip of chitin, terminating in a knob beset with fine setae; these processes extend, as far as the middle of the supra-anal lamina. The 7th tergite is hidden beneath the 6th, the 8th tergite is fringed with hair and conceals the 9th tergite; the supra-anal lamina is strongly produced, exceeding sub-genital lamina, it is depressed at the base, the depression being delimited by three carinae arranged in a triangle, the opening of the scent-glands at the apex of the triangle, a tubercle near the centre of the base-line. Sub-genital lamina asymmetrical, one style (the left), a deep notch on the right side. Supra-anal lamina of ♀ subtriangular, apex notched.

2 ♂♂, 2 ♀♀, Cameroons (Deutsche Entomol. Nat.-Mus.).

Genus *Phyllodromia* Serv.

Phyllodromia mirabilis sp. n. (Plate II, fig. 3.)

♂ Head testaceous, a castaneous blotch between the eyes; frons flattened, maxillary palpi very slender, testaceous; antennae testaceous at base, remainder fuscous. Pronotum trapezoidal, anteriorly scarcely covering vertex of head, posteriorly obtusely angled, sides deflexed, piceous, lateral margins and a large spot on the posterior part of the disc, fusing with the lateral margins, testaceous. Tegmina considerably exceeding the apex of the abdomen, castaneous at base becoming testaceous at apex, marginal area and a transverse fascia running from margin towards apex of anal field, testaceous; 13 costals, radial vein bifurcate, the lower branch multiramosa, the rami reaching the apex of the tegmen, discoidal sectors oblique, anterior ulnar vein multiramosa, posterior ulnar simple. Wings testaceous, mediastinal vein triramosa at apex, 9—10 costals, ulnar vein 7-ramosa, a minute

apical triangle. Abdomen testaceous, tergites and sternites laterally marked with castaneous, 7th and 8th tergites carinate, no opening of scent-glands visible; supra-anal lamina transverse, sub-genital lamina cucullate, apex cleft, margins slightly inflected, styles stout, asymmetrical, sub-triangular, terminating in acute points and overlapping. Cerci elongate, acuminate, hirsute, slender, of 19 joints. Legs testaceous; front femora with a complete row of spines on anterior margin beneath, the spines approximately equal in length; formula of apical spines $\frac{2}{1}$, $\frac{1}{1}$, $\frac{1}{1}$.

♀ Differs from ♂ in its much smaller size, in the shorter tegmina which do not exceed the apex of the abdomen by much; the testaceous spot on the pronotum does not fuse with the lateral margins; tegmina castaneous to apex, a testaceous macula on the margin towards apex; supra-anal lamina cucullate, triangular, sub-genital lamina ample, semi-orbicular; cerci less elongate.

♂ Total length 19 mm; length of body 13,5 mm; length of tegmina 15,8 mm; pronotum 4,1 mm × 5,1 mm.

♀ Total length 14 mm; length of body 10,9 mm; length of tegmina 10,7 mm; pronotum 3,9 mm × 4,5 mm.

5 ♂♂, 1 ♀, Cameroons (Conradt).

The species is closely allied to *P. supellectilium* Serv. by the coloration of the tegmina, by the flattened frons, venation, form of supra-anal lamina and by the pronounced sexual dimorphism; it can readily be distinguished by the colouration of the pronotum, the larger size, by the absence of scent-gland openings in the male and by the form of the sub-genital lamina and remarkable styles of the male.

Phyllodromia hemerobina, Gerst. (l. c. p. 57. 1883).

The following may be added to Gerstaecker's description of the species: Tegmina with 13 costals, discoidal field reticulated, anterior ulnar multiramose, posterior ulnar simple. Wings with 10—11 costals, the first 6 incrassated, ulnar vein 5-ramose. ♂ with supra-anal lamina trigonal, sub-genital lamina rather large with two symmetrically-placed slender styles. ♀ with supra-anal lamina transverse, sub-genital lamina with the apex cleft. *P. centralis* Gerst. is very similar but the supra-anal lamina of the male is transverse, the species moreover is larger and with the pronotum less heavily marked.

Phyllodromia conradti sp. n. (Plate II fig. 4.)

♂. Testaceous. Head with frons and face castaneous; antennae testaceous at base, remainder fuscous. Pronotum transversely elliptical, anteriorly and posteriorly truncate, with a

regular castaneous pattern on the disc. Tegmina with the veins and a suffusion in the anal field castaneous, 12 costals, the last two ramose, discoidal area reticulated, sectors oblique, posterior ulnar simple. Wings hyaline, veins castaneous, 13 costals, the first 7 with their apices incrassated and joined by transverse venulae, ulnar 5-ramose, a small triangular apical area, 1st axillary 5-ramose. Abdomen laterally margined with castaneous, it suddenly narrows towards the apex; supra-anal lamina strongly produced, very narrow and pointed; sub-genital lamina produced with a pair of minute styles at the apex. Cerci testaceous, castaneous at the base above, castaneous below. Femora rather sparsely armed, front pair with two spines and a row of piliform setae on the anterior margin beneath, apical spines $\frac{2}{1}$, $\frac{1}{1}$, $\frac{1}{6}$, no genicular spine on front femora. Tibiae spotted with castaneous on the outer aspect.

Total length 10 mm; length of body 7 mm; length of tegmina 8,5 mm; pronotum 2 mm \times 3 mm.

1 ♂, Cameroons (Conradt).

Allied to *P. hemerobina* Gerst. but distinguished by its smaller size and by the form of the supra-anal and sub-genital laminae of the male.

Phyllodromia neutra sp. n. (Plate II fig. 6.)

♂. Testaceous. Head castaneous, antennae testaceous. Pronotum trapezoidal, anteriorly and posteriorly truncate, lateral margins hyaline, disc rufo-castaneous. Tegmina with 12 costals, discoidal area not reticulated, sectors oblique, posterior ulnar simple. Wings hyaline, marginal area suffused with pale rufo-castaneous, apex of mediastinal vein tri-ramose, 8 costals, the last 2-ramose, the first 6 and the mediastinal rami incrassated at the apex and joined by transverse venulae, ulnar vein 6-ramose, a triangular apical area, 1st axillary 4-ramose. Abdomen sullied testaceous, opening of scent-glands on 7th tergite and covered by a brush of fine hairs; supra-anal lamina trigonal; sub-genital lamina with apex cleft in a V-shaped notch, the short styles springing from the apex on either side of the cleft. Cerci moderate, testaceous. Front femora with 5 long spines on anterior margin beneath, succeeded distally by a row of piliform setae, other femora rather sparsely armed, formula of apical spines $\frac{2}{1}$, $\frac{1}{1}$, $\frac{1}{1}$, no genicular spine on front femora.

Total length 10 mm; length of body 6,1 mm; length of tegmina 8 mm; pronotum 2 mm \times 2,5 mm.

1 ♂, Cameroons (Conradt).

Phyllodromia translucida sp. n.

♂. Rufo-testaceous. Pronotum transversely elliptic, posteriorly truncate; lateral margins broadly hyaline. Tegmina hyaline, reticulated, veins white, interstices filled with rufo-testaceous; marginal field broad, 11 costals the last two ramose, discoidal sectors oblique, posterior ulnar vein simple. Wings with veins, apex and marginal field rufo-testaceous; radial vein bifurcate from base, the upper branch giving rise to 4 costals, the lower branch giving rise to 3, the first five costals incrassated at apex, the last three ramose, ulnar vein 5-ramose, a triangular apical area, 1st axillary vein 4-ramose. Supra-anal lamina transverse, very shortly produced; sub-genital lamina with apex deeply and narrowly cleft, a short slender style on either side of the cleft. Cerci moderate, pointed. [Front femora missing.]

Total length 14,5 mm; length of body 12 mm; length of tegmina 12 mm; pronotum 3 mm \times 4 mm.

1 ♂, Cameroons (Conradt).

The nearest ally of the species is *P. pustulosa* Gerst. but it differs from that by its larger size and by the absence of castaneous dots from the tegmina.

Phyllodromia erythronotata sp. n.

♀. Closely allied to *P. albovariegata* mihi from Fernando Po, but differs in the following points: — Head entirely rufous. Pronotum rufo-testaceous with broad lateral vittae castaneous, lateral margins hyaline. Tegmina with 10 costals, last two branched. Wings with 9 costals, costal margin not flavid, apical triangle small. Sub-genital lamina at apex carinate, cleft. Cerci castaneous at base.

Total length 9,1 mm; length of body 6,3 mm; length of tegmina 7,3 mm; pronotum 2 mm \times 2,1 mm.

1 ♀, Cameroons (Conradt).

It is probable that the males of these two species differ from each other more than do the females and hence I think it advisable for the present to keep the two species separate.

Genus *Liosilpha* Stål.

I have recently had an opportunity of examining the type of *Liosilpha pumicata* Stål and there can be no doubt that the species is not congeneric with *Phyllodromia germanica* L.; it enters more naturally the genus *Pseudectobia* Sauss. as re-defined by me [Ann. Mag. Nat. Hist. (7) XIX p. 36 (1907)]; but I find (1) that *Lupparia* Wlk. antedates *Pseudectobia* Sauss. (2) that *Liosilpha*

may be distinguished from *Lupparia* by the absence of an intercalated apical triangle to the wings. Consequently *Pseudectobia* sinks as a synonym of *Lupparia* which may for the present at any rate be considered as separate from *Liosilpha*. The following species may be referred to *Liosilpha*:

L. pumicata Stål (Brazil). Type of the genus.

L. japonica Shelf. (Japan).

L. alluaudi Shelf. (Madagascar).

L. latipennis Br. (Ceylon) and the species described below.

Lupparia includes *L. adimoniais* Wlk. (Philippines), *L. insularis* Sauss. (Mauritius).

Liosilpha bicolor sp. n. (Plate II fig. 5.)

♀. Flavo-testaceous, nitid, rather convex. Head with eyes rather close together, a castaneous band between them; antennae with basal joint testaceous, remaining joints castaneous shading to rufous. Pronotum trapezoidal, posteriorly very obtusely angled. Tegmina extending slightly beyond apex of abdomen, marginal area very broad, 10 costals, the last 2 or 3 ramose, discoidal sectors oblique, posterior ulnar simple. Wings hyaline suffused with flavo-testaceous, mediastinal vein 3-ramose at apex, 10 costals, ulnar vein 9-ramose, no triangular apical area, 1st axillary 3-ramose. Abdomen castaneous above, paler at base, supra-anal lamina produced triangular, rufous; abdomen beneath castaneous, the sternites posteriorly and laterally margined with testaceous, sub-genital lamina semi-orbicular, not very large, rufous. Cerci of 14 joints, elongate, acuminate, fuscous tipped with testaceous. Femora and coxae testaceous, tibiae and tarsi castaneous; front femora with a complete row of spines on anterior margin beneath, formula of apical spines $\frac{2}{1}$, $\frac{1}{1}$, $\frac{1}{1}$, no genicular spines on front femora.

Total length 17 mm; length of body 14 mm; length of tegmina 14 mm; pronotum 4,9 mm \times 7 mm.

1 ♀, Cameroons (Conradt).

The bicolorous legs and banded abdomen render this a conspicuous species. A male also from the Cameroons is in the collection of Señor Ign. Bolívar, it resembles the female but the supra-anal lamina is strongly produced, slightly exceeding the sub-genital lamina which is asymmetrical and provided with an unequal pair of styles, the right being flattened and short, the left long, strongly chitinated and sharply pointed; the edge of the lamina is grooved to receive these styles.

Genus *Homalosilpha* Stål.*Homalosilpha cruralis* sp. n. (Plate II fig. 8c.)

♀. Head piceous, a rufous band between the ocelli, labrum testaceous; antennae rufous. Pronotum discoidal, sides not deflexed, greatest width behind the middle, anteriorly somewhat truncate, posteriorly very obtusely angled; testaceous, a curved irregular vitta on either side of the disc, two spots near the centre of the disc, posterior angles castaneous. Tegmina projecting considerably beyond apex of abdomen, castaneous, the marginal area and apex much paler. Wings flavo-hyaline. Abdomen above and beneath piceous, nitid, supra-anal lamina produced, deeply and triangularly notched at apex. Cerci long, rufous. Legs with coxae and femora piceous, tibiae and tarsi bright rufous; front femora with a row of short spines on the distal half of the anterior margin beneath, no spines on the posterior margin beneath; mid femora with 8 short spines on the anterior margin, 4 long spines on the posterior margin beneath; hind femora with 6 short spines on the anterior margin, 4 long spines on the posterior margin beneath; formula of apical spines $\frac{2}{1}$, $\frac{1}{1}$, $\frac{1}{0}$, no genicular spines on front femora.

Total length 26 mm; length of body 21 mm; length of tegmina 23 mm; pronotum 5,9 mm \times 8,1 mm.

British Uganda (Grauer).

The collection also contains a species of *Homalosilpha* from the Cameroons which corresponds exactly with Brunner's description of *Periplaneta vicina* (Nouv. Syst. Blatt. p. 236); the locality of the species was previously unknown.

The genus *Homalosilpha* Stål differs from *Pseudoderopeltis* Kr. in both sexes being fully winged and in the absence of membranous projections from the meso- and metanotum; it differs from *Periplaneta* Burm. in the form of the pronotum which is flat, the sides not being deflexed. Four species are known and they may be discriminated with the help of the following key:

1. Pronotum somewhat hexagonal in outline, *ustulata* Burm.
its greatest width at the middle. (Sunda Islands and Philippines.)
- 1'. Pronotum not as above, its greatest width behind the middle.
2. Anterior margin of pronotum parabolic.
3. Pronotum piceous, with lateral yellow *decorata* Serv.
vittae. (Borneo.)

- 3'. Pronotum testaceous with piceous markings *vicina* Br. (Cameroons.)
on disc.
2'. Anterior margin of pronotum sub-truncate. *cruralis* sp. n.
(British Uganda.)

Genus *Periplaneta*, Burm.

Periplaneta funebris sp. n.

♂. Piceous. Frons between the eyes depressed, concave, lower part of face concave and faintly transversely striated; antennae with apical four or five joints flavo-testaceous. Pronotum elliptic, smooth, without impressions, anteriorly truncate, posteriorly obtusely angled. Tegmina extending considerably beyond apex of abdomen. Wings castaneous. Abdomen with lateral flavo-testaceous markings on each sternite except the last two; the tergites project beyond the lateral margins of the sternites and their posterior angles are acutely produced backwards; supra-anal lamina subquadrate, posterior border sinuately emarginate; sub-genital lamina narrow, styles elongate, slender. Cerci moderate, fusiform (the right one has been mutilated and has regenerated). Front femora with a row of strong spines on anterior margin beneath not extending to proximal third, 1 or 2 spines only on posterior margin; formula of apical spines $\frac{2}{2}$, $\frac{1}{1}$, $\frac{1}{1}$. [Posterior tarsi mutilated.]

♀ Similar to ♂ but larger, frons flattened, face convex, very slightly punctate. Tegmina less elongate in proportion to body. Abdominal sternites with lateral castaneous markings. Supra-anal lamina tectiform, deeply notched posteriorly. Posterior metatarsus barely equal to the remaining joints in length, bi-seriately spinose beneath, its pulvillus apical; the next joint with the pulvillus occupying half its length, bi-seriately spinose at base; the next two joints with their pulvilli occupying the total length of the joints.

♂ Total length 29,5 mm; length of body 20 mm; length of tegmina 25 mm; pronotum 6,3 mm; \times 9,1 mm.

♀ Total length 33 mm; length of body 28 mm; length of tegmina 27,5 mm; pronotum 8 mm \times 13 mm.

Cameroons. Type ♂ in Deutsches Ent. Nat. Mus. Type ♀ in Oxford Mus.

The species superficially resembles *P. lata* Herbst but the tarsi are different, being intermediate in character between *Methana* and *Periplaneta*.

Periplaneta bicolor sp. n.

♀ Head and pronotum bright rufous, tegmina and abdomen piceous. Head with eyes rather small and very far apart. Frons

somewhat swollen; antennae and palpi fuscous. Pronotum discoidal, sides deflexed, anteriorly and posteriorly truncate, posteriorly margined with piceous. Tegmina exceeding the apex of the abdomen. Wings with anterior half castaneous. Abdomen beneath with disc castaneous; supra-anal lamina triangularly produced, apex emarginate but not deeply. Cerci long, fusiform. Coxae and tibial spines rufo-castaneous, front femora armed on anterior margin beneath with a complete row of spines, the distal shorter than the proximal, unarmed on posterior margin. Posterior metatarsus longer than remaining joints of tarsus, pulvilli apical.

Total length 22,4 mm; length of body 18,9 mm; length of tegmina 17,1 mm; pronotum 5,8 mm \times 7 mm.

1 ♀. Cameroons.

Genus *Nauphoeta* Burm.

Nauphoeta epilamproides sp. n. (Plate II, fig. 7).

♂. Flavo-testaceous. Head with vertex projecting considerably beyond anterior margin of the pronotum. Distance apart of eyes less than length of first antennal joint, a band between the eyes and a narrower band between the antennal sockets, castaneous. The two apical joints of the maxillary palpi castaneous. Antennae fuscous. Pronotum elliptical, its greatest width behind the middle, anteriorly truncate, posteriorly very obtusely angulate, covering the scutellum, uniformly flavid. Tegmina very broad, anterior margin arched, posteriorly rounded, seriatly punctate between the veins; marginal area equal to one third of total breadth, mediastinal vein multiramose, radial and anal veins black; the veins of the marginal area beneath are more strongly marked and elevated. Anterior part of wings coriaceous, suffused with rufo-castaneous. Abdomen beneath rufo-testaceous; supra-anal lamina produced, bilobed; sub-genital lamina short, exceeded by the supra-anal lamina, notched on either side to receive the slender styles, the posterior lateral angles acute, spined¹⁾. Cerci moderate, fusiform. Legs with the coxae and femora rufous, the genicular extremity of the femora, the tibiae and the tarsi castaneous; front femora unarmed beneath, formula of apical spines $\frac{0}{1}$, $\frac{1}{1}$, $\frac{1}{6}$, no genicular spines on front femora.

♀ Similar to ♂ but larger and paler, the tegmina extend more beyond the apex of the abdomen; supra-anal lamina more markedly bilobed; sub-genital lamina ample, its posterior margin sinuate.

¹⁾ This is a character common to many species of *Nauphoeta*, but it seems to have escaped notice hitherto.

♂ Total length 48 mm; length of body 44,9 mm; length of tegmina 38 mm; pronotum 11,5 mm \times 17,1 mm.

♀ Total length 52 mm; length of body 46 mm; length of tegmina 42,8 mm; pronotum 11,4 mm \times 17,5 mm.

Cameroons. Type ♂ in Oxford Museum, Type ♀ in Deutsches Entom. Nat.-Museum.

The species is most closely allied to *N. testacea*, Br. but it can be distinguished by its larger size and broad tegmina with broad marginal field.

Nauphoeta elegans sp. n.

♂. Flavo-testaceous. Head with vertex considerably projecting beyond the anterior margin of pronotum, distance apart of eyes less than length of first antennal joint; a castaneous band between the eyes and some castaneous markings on the face. Antennae piceous, equal to the body in length. Pronotum trapezoidal, posteriorly very obtusely angled, the scutellum exposed; a broad castaneous vitta on either side of the disc, the vittae fail to reach the anterior margin, their inner borders notched. Tegmina considerably exceeding the apex of the abdomen, narrow, their outer margin very slightly sinuate, their apices obliquely rounded; marginal area broad, mediastinal vein multiramose, radial vein piceous for one-third of its length. Wings flavid towards apex of anterior margin. Abdomen castaneous above, with a pair of lateral flavid spots at the base of each tergite; supra-anal lamina quadrately produced, slightly bilobed. Abdomen beneath flavo-testaceous, margined with castaneous; sub-genital lamina as in the preceding species but narrower. Legs with coxae and femora flavo-testaceous, tibiae and tarsi castaneous; formula of apical spines $\frac{0}{1}$, $\frac{0}{1}$, $\frac{1}{1}$, genicular spines small, none on anterior femora.

Cameroons (L. Conradt).

Total length 50 mm; length of body 39,5 mm; length of tegmina 42 mm; pronotum 9 mm \times 13 mm.

Allied to *N. flexivitta* Wlk. (= *frenata* Gerst.) but larger, tegmina relatively longer and pronotum differently marked.

Nauphoeta minuta sp. n.

♀. Allied to *N. cinerea* Oliv. but much smaller and differently marked. Testaceous. Head with eyes, widely separated, vertex with four vittae, four spots between the eyes a transverse narrow band between the antennal sockets and a broad longitudinal band extending from between the eyes to the base of the clipeus, casta-

neous. Antennae testaceous. Pronotum as in *N. cinerea* but the central lyrate marking differently arranged and dark castaneous. Tegmina as in *N. cinerea* but just exceeding the apex of the abdomen, radial vein not marked at base. Abdomen above testaceous speckled with castaneous, with lateral blotches of castaneous; supra-anal lamina sub-quadrately produced, posteriorly emarginate; abdomen beneath testaceous with a broad castaneous band on each sternite except the last, where the band is replaced by a round spot; a lateral castaneous blotch on each sternite. Sub-genital lamina as in *N. cinerea*. Legs testaceous, formula of apical spines $\frac{0}{1}$, $\frac{1}{1}$, $\frac{1}{0}$.

Total length 15,5 mm; length of body 15 mm; length of tegmina 11 mm; pronotum 5 mm \times 6 mm.

1 ♀, Cameroons (L. Conradt).

I have examined a good series of *N. cinerea* from all parts of the world and find that the species is quite constant in the form of markings on the pronotum and in the colouration of the abdomen; the West African form has these markings dark castaneous instead of pale castaneous, but they correspond in shape and arrangement with the markings on the pronotum of forms from other parts of the world. I have therefore little hesitation in separating this small form as a distinct species.

Nauphoeta bicolor n. sp.

♂. Head dark castaneous, nitid, ocelli and palpi testaceous. Eyes further apart than length of 1st antennal joint; antennae fuscous; vertex projecting beyond the anterior margin of the pronotum. Pronotum castaneous, sides deflexed, posteriorly scarcely angulate; two circular impressions on posterior half of disc and a few scattered punctures. Scutellum hidden. Tegmina testaceous scarcely extending beyond apex of abdomen, seriatly punctate between the veins, radial veins piceous only at its extreme base. Wings suffused with castaneous. Abdomen castaneous, the disc beneath rufescent; supra-anal lamina quadrately produced, posteriorly emarginate; sub-genital lamina as in the two preceding species. Cerci short, acuminate. Legs castaneous, formula of apical spines $\frac{0}{1}$, $\frac{1}{1}$, $\frac{0}{0}$, genicular spines very small, none on front femora.

♀ Similar, but tegmina not quite reaching apex of abdomen; no impressions on disc of pronotum; supra-anal lamina more deeply emarginate.

♂ Total length 27 mm; length of body 24 mm; length of tegmina 18,8 mm; pronotum 7 mm \times 10 mm.

♀ Total length 24,5 mm; length of body 24,5 mm; length of tegmina 18 mm; pronotum 6,7 mm \times 9,5 mm.

Cameroons (L. Conradt).

Type ♂ in Deutsches Entom. Nat. Mus., type ♀ in coll. Señor Ign. Bolívar. I know of no species of *Nauphoeta* that at all resembles this; it may readily be distinguished by its striking colouration.

I take this opportunity of describing two new species of *Nauphoeta* in the collection of the Musée d'Histoire Naturelle, Paris.

Nauphoeta pulchra sp. n.

♀ Flavo-testaceous, nitid. Head with a castaneous band between eyes, which are very wide apart; antennae castaneous, two basal joints testaceous. Pronotum trapezoidal, posteriorly truncate, on either side a narrow sinuate black vitta, extending from posterior to anterior margin, on the anterior margin the vittae join each other, posterior margin between the vittae very narrowly black. Tegmina corneous, seriate-punctate, scarcely extending beyond apex of abdomen, radial vein for two-thirds of its length and the anal vein black. Wings flavid. Abdomen uniformly flavid, supra-anal lamina subquadrate, sub-genital lamina ample, posterior margin sub-emarginate at apex. Cerci short, acuminate. Legs flavo-testaceous, tibial spines castaneous.

Total length 31 mm; length of body 29 mm; length of tegmina 24,5 mm; pronotum 8 mm \times 10,5 mm.

1 ♀, Lower Ogowé, between Lambaréné and the sea (E. Haug. 1901).

Nauphoeta lurida sp. n.

♀ Piceous. Ocelli testaceous, labrum castaneous. Antennae short; distance apart of eyes equal to 1st antennal joint. Pronotum trapezoidal, posteriorly very obtusely angled, scutellum exposed, sides strongly deflexed, disc punctate with clear interspaces, several shallow impressions, anteriorly, laterally and posteriorly rugosely striate. Tegmina not extending beyond apex of abdomen, flavo-testaceous heavily blotched with piceous along the radial and anal veins. Wings flavo-hyaline. Abdomen uniformly piceous, tergites with a few scattered tubercles, supra-anal lamina sub-quadrate, margins slightly reflected, surface rather rugose. Abdomen beneath nitid, spiracular tubes protruding from beneath angles of penultimate tergite; sub-genital lamina ample, divided by a sulcus, incomplete in the middle, into a narrow anterior zone and a broad posterior zone, surface of latter finely striate and with a few impressions, posterior margin sinuate and slightly

emarginate in the middle. Cerci short; not extending beyond the supra-anal lamina. Legs piceous.

Total length 48 mm; length of tegmina 40 mm; pronotum 10,5 mm \times 15,5 mm.

1 ♀, Mpala, Tanganyika.

This is a very remarkable species on account of the rugosity of the pronotum and abdomen and is most nearly allied to *N. thoracica* Kirby.

The following key may assist in the determination of the species of *Nauphoeta*:

- (10) 1. Pronotum with fuscous intra-marginal vittae.
- (9) 2. Total length exceeding 18 mm.
- (4) 3. Disc of pronotum with a definite castaneous or fuscocastaneous pattern. *cinerea* Oliv. (Cosmopolitan.)
- (3) 4. Disc of pronotum unicolorous or with obscure darker suffusions.
- (8) 5. Intramarginal vittae broad, not joined in front.
- (7) 6. With marginal yellow vittae. *flexivitta* Wlk. [*frenata* Gerst. ? = *discoidalis* Sauss.] (Cameroons, Congo.)
- (6) 7. Without marginal yellow vittae. *elegans* sp. n. (Cameroons.)
- (5) 8. Vittae narrow, joined in front. *pulchra* sp. n. (Ogowe.)
- (2) 9. Total length not exceeding 18 mm. *minuta* sp. n. (Cameroons.)
- (1) 10. Pronotum without fuscous intra-marginal vittae.
- (20) 11. Pronotum testaceous or fulvous.
- (13) 12. Pronotum with two large confluent spots. *gestriana* Sauss. (Gallaland.)
- (12) 13. Pronotum not as above.
- (15) 14. Distance apart of eyes scarcely greater than length of first antennal joint. *epilamproides* sp. n. (Cameroons, Ogowe.)
- (14) 15. Eyes very wide apart.
- (17) 16. Marginal area of tegmina very broad, large species *testacea* Br. = [*pallescens* Kirby] (Cameroons, San Thomé.)
- (16) 17. Marginal area of tegmina not very broad, smaller species.

- (19) 18. Pronotum finely mottled. *madecassa* Sauss. (Madagascar.)
 (18) 19. Pronotum not finely mottled. *heydeniana* Sauss. (Madagascar.)
 (11) 20. Pronotum black or rufous.
 (22) 21. Pronotum rufous. *bicolor* sp. n. (Cameerons.)
 (21) 22. Pronotum black.
 (26) 23. Pronotum narrowly bordered with testaceous.
 (25) 24. Disc of pronotum unicolorous. *occidentalis* Fab. (= *rufipes* Kirby). (W. Africa.)
 (24) 25. Disc of pronotum with a testaceous pattern. *guineensis* Sauss. (Guinea, Gold Coast.)
 (23) 26. Pronotum not bordered with testaceous.
 (28) 27. Supra-anal lamina carinate. *thoracica* Kirby (Shiré River.)
 (27) 28. Supra-anal lamina not carinate. *lurida* sp. n. (Tanganika.)

Nauphoeta basalis Kirby from Tonkin is a species of *Paranauphoeta* (sub-fam. *Perisphaerinae*) and *Nauphoeta aspersata* Kirby from the Transvaal is a species of *Oxyhaloa* (sub-fam. *Oxyhaloinae*). *Panchlora brazzae* Bol. appears to be a true *Panchlora* though in colour very similar to *N. flexivitta* Wlk.

Genus *Oxyhaloa* Brunner.

Oxyhaloa perspicua sp. n.

Pronotum and tegmina testaceous, head, body and legs piceous.

♂. Eyes nearer together than antennal sockets; lower part of face depressed, slightly rugose; labrum bordered with testaceous; 13 basal joints of antennae piceous, the remainder rufous. Pronotum trapezoidal anteriorly and posteriorly truncate, with two narrow transverse depressions anteriorly; covered with a sparse erect rufous pubescence. Tegmina lanceolate exceeding the apex of the abdomen, with a sparse erect pubescence, the part of the right tegmen covered by the left, hyaline, with iridescent sheen. Wings hyaline, veins fusco-testaceous, anterior part narrow, lanceolate, its apex not projecting beyond the posterior part, ulnar vein with 13 rami, 1st axillary with 8 rami. Abdomen above castaneous on the lateral margins, supra-anal lamina transverse, narrow, its posterior angles rounded; abdomen beneath opaque piceous, sub-genital lamina slightly produced, with a pair

of slender styles, that are slightly hirsute. Cerci with a testaceous spot at base. Legs piceous. Formula of apical spines $\frac{0}{1}$, $\frac{0}{1}$, $\frac{0}{0}$, no genicular spines on anterior femora; posterior metatarsus shorter than remaining joints.

♀ similar to ♂ but larger; supra-anal lamina more produced, sub-genital lamina ample, margin sinuate.

♂. Total length 18 mm; length of body 14 mm; length of tegmina 13,9 mm; pronotum 4 mm \times 4,1 mm.

♀. Total length 23,3 mm; length of body 19,5 mm; length of tegmina 19 mm; pronotum 4,9 mm \times 6 mm.

Cameroons.

Type ♂ in Deutsches Ent. Nat.-Mus. Type ♀ in coll. Señor Ign. Bolívar.

Genus *Paraplecta* Shelf.

Paraplecta conradti sp. n. (Plate II, fig. 10).

♂. Dark castaneous. Clipeus testaceous, antennae fuscous, with a testaceous band about the middle. Vertex not covered by pronotum. Pronotum trapezoidal, anteriorly and posteriorly truncate, covered with minute tubercles, disc depressed. Tegmina extending considerably beyond apex of abdomen, 15 costals, 9 discoidal sectors which are longitudinal and given off at an angle from the single ulnar ramus. Wings hyaline, marginal field semi-coriaceous, costals ramose and obsolescent, median vein bifurcate from the base, ulnar vein with 13 rami, all but 4 going towards the dividing vein, axillary veins strongly curved; a prominent apical field, about $\frac{1}{4}$ of total wing-length, divided into two unequal portions by a longitudinal vein, the upper portion with obsolescent venation. Abdomen above with the disc testaceous, supra-anal lamina subquadrately produced, slightly emarginate. Cerci rufous. Abdomen beneath with the disc rufous, sub-genital lamina small, the style long and slender. Legs testaceous.

Total length 11,2 mm; length of body 9 mm; length of tegmina 9,1 mm; pronotum 3 mm \times 3,1 mm.

Cameroons (L. Conradt).

The species is close to that described by Borg as *Eustegasta parva* and subsequently by me as *Paraplecta aethiopica*, but can be distinguished by the different venation of the tegmina, the granulate pronotum and form of the sub-genital lamina. It is scarcely necessary to point out that neither *parva* Borg nor *conradti* mihi have the slightest affinity with the genus *Eustegasta*.

Genus *Chorisonaura* Brunner.*Chorisonaura pallida*, sp. n. (Plate II, fig. 9).

♂. Pale testaceous. Head slightly darker between the eyes, vertex forming a very acute angle with frons. Pronotum transversely elliptical, lateral margins broadly hyaline. Tegmina lanceolate, marginal field broad, mediastinal vein stout, remaining veins very slender, 13 costals, 7 oblique discoidal sectors given off from the anterior ulnar vein, 4 axillary veins. Wings hyaline, marginal field suffused with testaceous, 12 costal veins, all except the last few incrassated, medio-ulnar field extremely narrow, 11—12 transverse venulae crossing the medio-discal area, ulnar vein with 2—3 rami; triangular apical field projecting slightly beyond the outer margin of the wing. Supra-anal lamina triangular, slightly cucullate, carinate; sub-genital lamina produced, cucullate, carinate, a pair of minute styles close together from the apex. Cerci elongate.

♀. Similar, but tegmina with pale flavo-testaceous maculae between the veins; supra-anal lamina less cucullate, apex slightly emarginate, sub-genital lamina very large, posteriorly somewhat truncate.

♂ and ♀ Total length 10 mm; length of body 8 mm; length of tegmina 8,9 mm; pronotum 2 mm \times 3 mm.

Cameroons (L. Conradt).

This is easily distinguished from the only other African species *C. africana*, Borg which is pilose on tegmina and legs.

Genus *Pseudoglomeris* Brunner.*Pseudoglomeris oniscina* Gerst.*Perisphaeria oniscina* Gerstaecker, Mitt. Ver. Vorpomm. XIV p. 75 (1883).

♂. Castaneous. Head completely covered by pronotum; eyes touching, ocelli absent; antennae and maxillary palpi testaceous. Pronotum transversely elliptical, more arcuate anteriorly than posteriorly, anteriorly cucullate, rugose, punctate with a few smooth interspaces, humeral angles pronounced; beneath with the typical carina ending in a spatulate tooth. Tegmina considerably exceeding the body in length, castaneous becoming flavo-hyaline towards their extremities, reticulate, mediastinal field broad. Wings flavo-hyaline. Abdomen rufo-castaneous; sub-genital lamina irregular, asymmetrical, deeply notched on the right side, no styles. Cerci moderate, flavid. Legs rufo-castaneous, tibial spines in three rows.

Total length 16,5 mm; length of body 13 mm; length of tegmina 14 mm; pronotum 4 mm \times 6,3 mm.

1 ♂, Cameroons (L. Conradt).

I have but little doubt that this is the male of Gerstaecker's species. The typical carina ending in a spatulate tooth is a very characteristic feature of the Oriental genera *Perisphaeria* and *Pseudoglomeris* and the male of *oniscina* is also in general appearance very like males of *Pseudoglomeris* species from Burma, Borneo, Java etc. The female of *oniscina* differs from females of Oriental species of *Perisphaeria* and *Pseudoglomeris* in the total absence of a tooth to the pronotal carinae beneath, but otherwise is very similar; it is convex and possesses the power of rolling itself up into a ball like a Millipede or terrestrial Isopod and like the Oriental *Perisphaerinae* of the female sex. On account of the division of the abdominal tergites into two zones separated by a sulcus, *oniscina* falls into the genus *Pseudoglomeris* and not into the genus *Perisphaeria*. The genus is new to the Ethiopian fauna.

Explanation of the plate:

- Fig. 1. Apex of abdomen of *Anaplecta conradti* sp. n.
♂ Dorsal view.
- Fig. 2. " " " " *Ischnoptera basalis* Gerst.
♂ Dorsal view.
- Fig. 3. " " " " *Phyllodromia mirabilis* sp. n.
♂ Ventral view.
- Fig. 4. " " " " *Phyllodromia conradti* sp. n.
♂ Dorsal view.
- Fig. 5. " " " " *Liosilpha bicolor* sp. n.
♂ Ventral view.
- Fig. 6. " " " " *Phyllodromia neutra* sp. n.
♂ Dorsal view.
- Fig. 7. " " " " *Nauphata epilamproides* sp. n.
♂ Ventral view.
- Fig. 8. Pronotum of (a) *Homalosilpha ustulata* Burm., (b) *H. vicina* Br.,
(c) *H. cruralis* sp. n.
- Fig. 9. *Chorisoneura pallida* sp. n. (a) tegmen, (b) wing.
- Fig. 10. Wing of *Paraplecta conradti* sp. n.